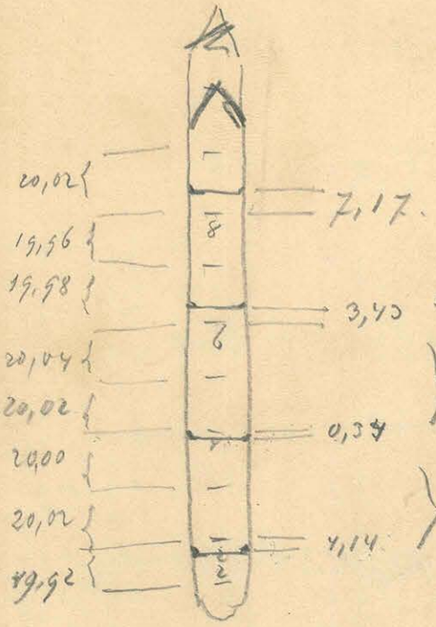
Ms 5097/53-54. Eötvös Loránd: Folyadékok felszíni feszültsége

Ms 5097 / 53

Ábrázolási feladat

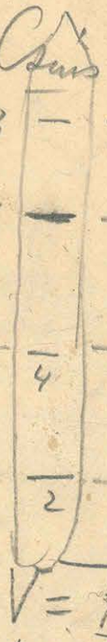


1 m-enként mért hosszak összege.

1) $\frac{2000}{43,68} = 45,787$

2) $\frac{2000}{43,83} = 45,631$

3) $\frac{2000}{43,82} = 45,641$



2290,20
~~1268,61~~
1828,76.
1827,97
1826,56
1157,30

$V = 89,30,79$

188,95

(0-2) összeg $= 1000 + 4,14 \cdot 45,641$ – mennyiség

r kiszámítása $45,64\,\pi r^2 = 2000$ $a = 2,399$

$r = 3,813$

$\frac{r}{a} = 1,5568$ táblából $\frac{h}{a} = 0,3429$

$h = 0,8226$ Adott: –

Mennyiség $= \pi a^2 r - \pi r^2 h = 67,70 - 36,05 = 31,65$

táblából (0,2) összeg $= 1157,30$

A felső csonk térfogata.

Fogyasztói összeg $= 2983,86 + 13,82 \times 45,631$ + mennyiség

Fogyasztói összeg

~~Csúcs = (6,8) +~~

Csúcs $+ (6,8) - 11,02 \times 45,787$ + m.

$Csúcs = 2983,86 + 13,82 \times 45,631 - (6,8) + 11,02 \times 45,787$

$Csúcs = 1268,61$

Fogyasztói összeg $= 3614,48 +$ Mennyiség.

A forgó henger éltér térfogata.

$r = 2{,}735$

$a = 2{,}234$

$V = 3614{,}48$ + maradék.

$\frac{r}{a} = 1{,}672$ $\quad \frac{h}{a} = 0{,}2960$ $\quad h = 0{,}6613$

$K = \pi a^2 r - \pi r^2 h = 58{,}55 - 28{,}98$

maradék $= 29{,}57$

15°5 nál forg test $V = 3644{,}05$ köbm.

Befoglaló henger

Cső + eltér − Cső − kerpő = 2627 milljó.

eltér térfogata = 2627 + kerpő

kerpő = $8{,}93 \times 1{,}2 = 10{,}7$ milljó.

éltér térfogata = 2637,7.

A forg. test térfogata = 5286,74.

1 köbc. éltérő forg 15°5 nál 1,49 milljó.

éltérő forg térfogata = 7,9 milljó.

forgáskép térfogata = 2629,8

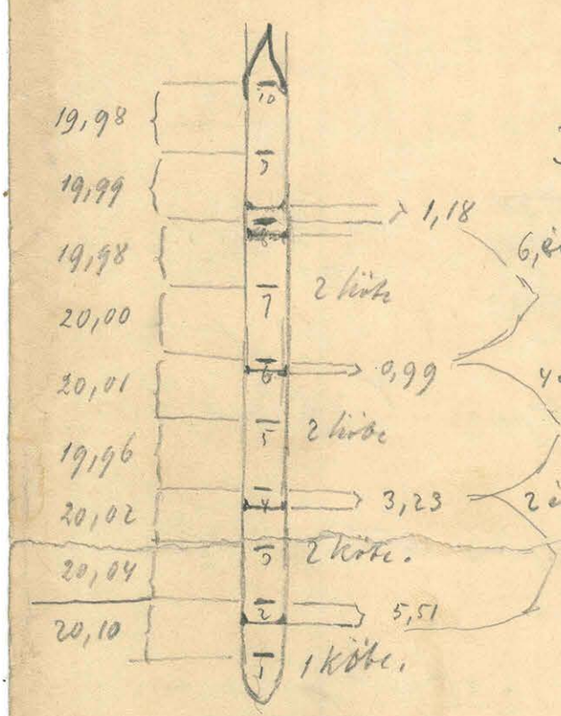
$S = \frac{2629{,}8}{3644{,}05} = 0{,}7217.$

Acélyt adtam.

I. jénai üvő. 3 cm

17,5° C-ra van kalibrálva.

A hőmérő 15° C.



1 n.m.-nek megfelelő térfogat

6 és 8 között:
$\frac{2000}{42,15} = 47,450$

4 és 6 között
$\frac{2000}{42,21} = 47,382$

2 és 4 között
$\frac{2000}{42,34} = 47,237$

Cm-ként térfogat

10 Cs = 2297,20

9

8 ~~2107,72~~ 1898,07

6 ~~2110,16~~ 1893,84

4 ~~2110,07~~ ~~2107,22~~ 1892,78

2 ~~1260,7~~ 1226,74

Összes térfogat V = ~~9813,21~~

r kiszámítása...

A hengerben 2 köbcentiméter hosszra esik kb. 42,24 n.m. térfogat

$42,24 \pi r^2 = 2000$ ebből:

$r^2 = 3,882$ n.r.

V = 9208,63

Az üveg alkohol miatt kis térfogata.

Alkohol nyár 20°-nál $a^2 = 5,731$ $\frac{\Delta a^2}{a a} = 0,0157$.

A mérő térfogata = $u = \pi a^2 r - \pi r^2 h$. kalibrálásnál

17,5°-nál $a^2 = 5,770$ $a = 2,399$

$\frac{r}{a} = 1,6092$ táblából $\frac{h}{a} = 0,3200$.

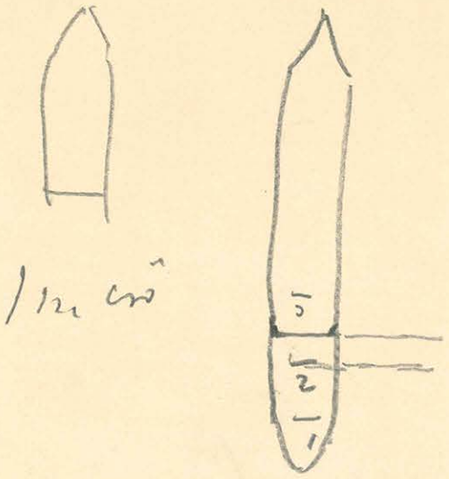
$h = 0,768$

$u = 69,89 - 36,36 = 33,53$ köbcentiméter.

A felső Co víz + kiöntés. benne elmerülő

15°5 celsiusnál.

átlag kiöntés



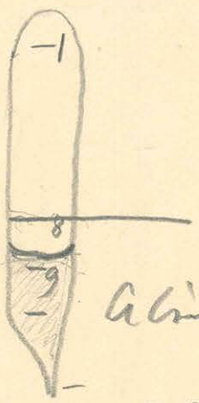
~~24,22~~
= 1226,74 + mennisbum
+ 7,96 × 47,237.
= 1,226,74 + 376,01 + mennisbum.

$a_{22}^2 = 4,814$ $a^2_{15,5} = $ ~~4,980~~ $= 4,990$ $a_{15,5} = 2,234$

$\frac{r}{a} = 1,738$ $\frac{h}{a} = 0,2700$ $h = 0,6032$

$u = \pi a^2 r - \pi r^2 h = 60,86 - 28,56 = 32,30$

tehát 15,5° nél a tényleges kiöntés = 1635,05 köbmm.



a csúcs kiöntés = 1635,05 + 14,62 × 47,50 − mennisbum.

8-ról − a csúcs kiöntés = 2297,20.

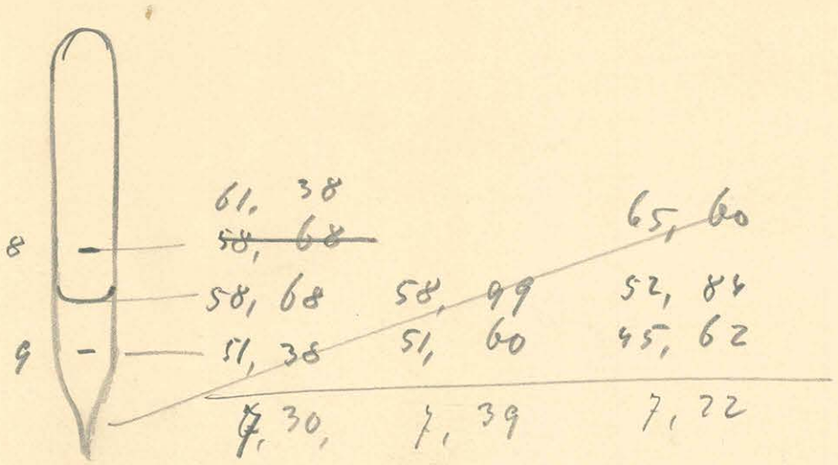
Az üveg térfogata (mert víz kiöntve nélküle) } = Dugóval együtt a henger és alsó rész kiöntése
1182 mgr.
A csőben fennálló levegő súlya 17 mgr.

tehát az üveg súlya = ~~1170~~ mgr.
= 1199 mgr.

I kánni cső acetonnal

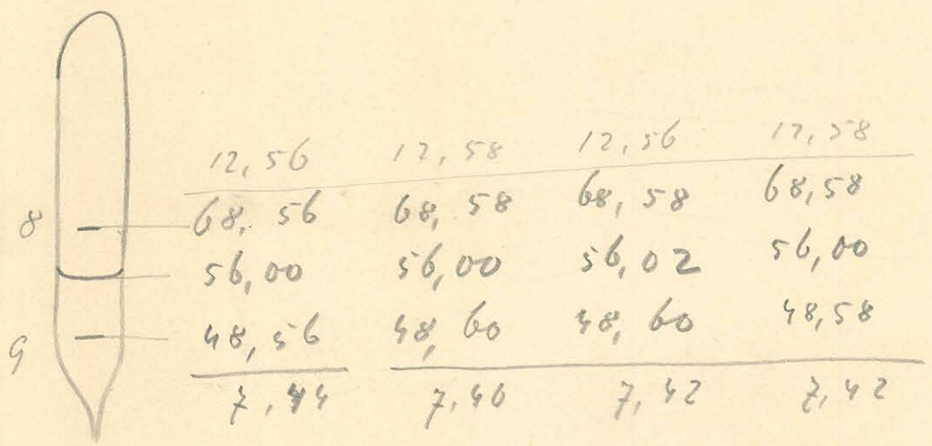
Forró vízben

temp. 96,8



8	~~61, 38~~ ~~58, 68~~		65, 60
	58, 68	58, 99	52, 84
9	51, 38	51, 60	45, 62
	~~7, 30~~	7, 39	7, 22

temp. 96,8



	12,56	12,58	12,56	12,58
8	68, 56	68, 58	68, 58	68,58
	56,00	56,00	56,02	56,00
9	48, 56	48, 60	48, 60	48,58
	7,44	7,46	7,42	7,42

$$v = \left(1 + \frac{27}{10000}\right) 2298{,}70 - 12{,}57 \cdot \left(1 + \frac{18}{10000}\right) 47{,}45 + 22{,}1$$

$$v + w = \left(1 + \frac{27}{10000}\right) 9200{,}13$$

Rugós cső $\frac{1}{400}$

$$v = 2004{,}9 - 597{,}5 + 22{,}1$$

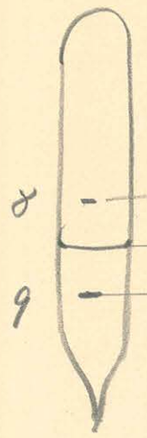
$$v = 1733{,}8$$

$$v + w = 9258{,}1$$

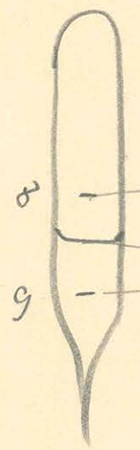
$$w = 7524{,}3$$

Torri amylalkohol gőzben márc. 15

temp.



	14,55	14,54	14,54
δ	37,80	37,78	37,78
	23,25	23,24	23,24
g	17,77	17,76	17,76
	5,48	5,48	5,48



14,26

127,36

δ			
	113,10	113,10	113,10
g	107,40	107,40	117,39
	5,80	5,80	5,81

Ujra ürülve márc 16

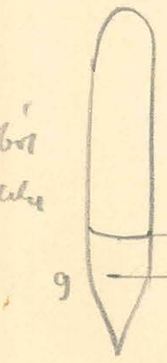
temp. 129,5

					10 m. utan	
	100,84	100,86	100,84	100,82	100,78	100,78
g	95,09	95,08	95,06	95,06	95,06	95,06
					5,72	5,71

2307,1 679,2

1) $1645,0 = v = \left(1+\frac{36}{1000}\right) 2298,8 - 14,28\left(1+\frac{24}{1000}\right) 47,45 + 17,1$

$9243,3 = v+w = \left(1+\frac{26}{1000}\right) 9210,2$



ujból ürülve

~~59,7~~	65,60	
g	59,72	
	5,88	

$\frac{1}{1000}$ adat $v = $ ~~1648,9~~ 1649,1

$v+w = 9266,4$ $\mu = 1193$

~~$w = 7\ldots$~~ $w = 7617,3$

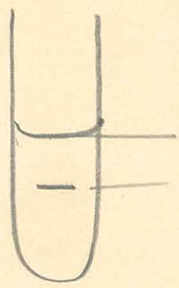
Forró vízgőzben

temp

	3h. 0m			3h. 10m		3h. 20	
	92,30	92,28	92,26	92, 18	92,20	92,24	92,24
9	84,85	84,85	84,85	84, 87	84,88	84,93	84,92
	ξ,45		ξ,41	ξ,31	ξ,32	ξ,31	ξ,32

1 mérési forró alkoholban

temp. 78,5



63,08 63,07
52,86 52,86
10 22 10 21

Mercius

26
98 elvi 372

95
22 vin 373

Ujra beallitva

55
82 vin 373

83
56 elvi 373

$a^2 = 3,463$
mercius = 26,95

temp. 78,5°

temp. 14,2°

64,06 64,06
56,14 56,15
7,92 7,91

2
71 vin 431

74
6 elvi 432

$v = 1226,74 + 7,92 \times 47,237 + \text{mer.}$
$374,1 + 30,3 = 1631,1$

$v_{14,3} = 1631,1$

14 Dec dm

$v_{14,0} = 1631,1$

temp. 14,4

14°3.

80, 46 80, 47

65, 75 65, 76

14, 71 14, 71

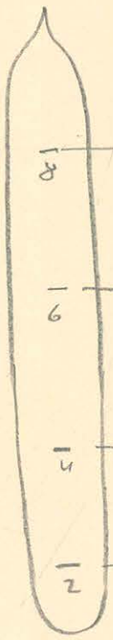
25
93 min 432

92 432
29 sec

Cines = Fracionário + 14,71 × 47,45 - menisco

= 1600,8 + 698,0

Cines = 2298,8



2298,8

1 cm-m-nex superior

47,450 1898,07

47,382 1893,84

47,237 1892,78

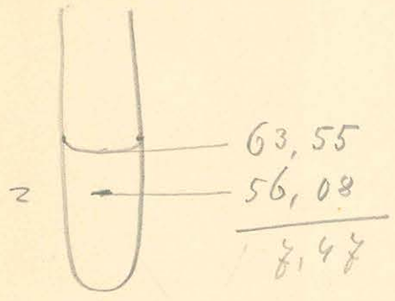
1276,74

9218,23
1631,1
7579

9248

Olvadó jégben

temp. 1,2 – 0,3



Mennes

96
41 vin 445

38
96 vin 442 4473

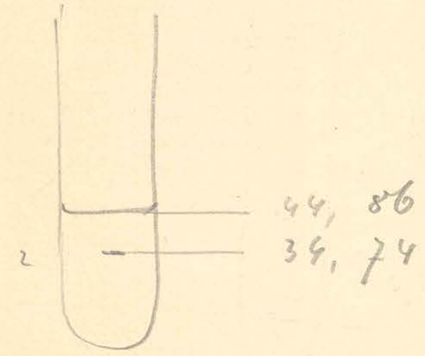
0
43 vin 443

$V = 1276,74 + 7,47 \times 47,23 + \text{mennes}$ mennes = 33,7

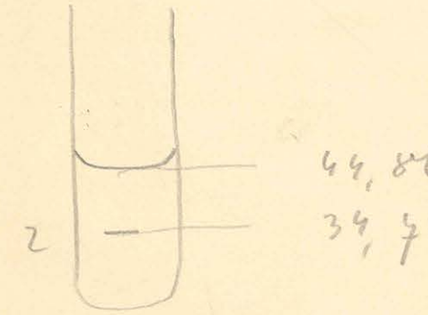
$V = 1617,2$ $\frac{1}{400}$ rl eljött

forró alkoholban

temp. 77,8

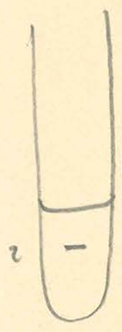


temp. 77,8



Olvadó pont

Temp. 42 - 0,2



2	130,70	130,70
	123,14	123,12
	2,56	2,58

Glycerinhem

Március 6.

I. sűrű étter cső.

102,2

74,66

264,72

74,66

éter	50	045	
	95		
	89		346
éter	41	048	
			m = 1,73
éter	48		
	93	345	
	87		
éter	40	047	

$\frac{}{}$ = 1226,74 + 9,94 × 47,237 + mercury

hőmérséklet korrekcióval 0,000 01 higanyra hőmérsékletre.

V = 1230,05 + 9,92 × 47,237 + mercury

+ 468,59 + mercury.

mercury $\frac{m}{r}$ = 0,446 $\frac{m}{a}$ = 1,0304

a = 1,679

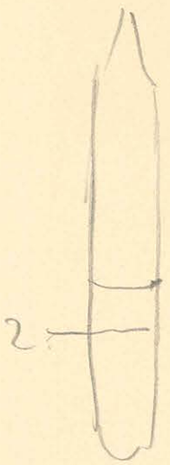
mercury hőfok = 27,8

V = 1721,4 kb.m.m.

V + W = 9233,5

W = 7512,1

Tegn. 111°4c.



				Meinhm	
				63	
				95	332
				90	
				58	332
	73,48	73,48			
2	63,86	63,86		65	
	9,62	9,62.		95	332 1,66
				89	
				57	332

$v = 1230,43 + 9,64 \times 47,207 +$ Meinhm

$m = 1,66 \quad r = 3,882 \quad \frac{m}{r} = 0,428 \quad \frac{m}{a} = 1,0390$

$a = 1,598$

$v = 1226,74 + 9,62 \times 47,207 + 20,0$

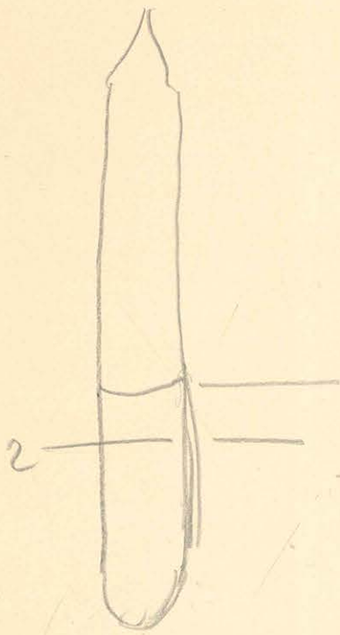
$1200,42 + 455,37$

$v = 1706,0$

$v + w = 9206,2$

$w = 7530,2$

120° S



72,80
63,76
9,04

Mesures

85 318 318,5
3
98
79 319 m = 1,592
85 } 318
3
97 } 319
78

$v = 1230,83 + 9,06 \times 47,237 +$ mesures

$m = 1,592 \quad \frac{m}{r} = 4,101 \quad \frac{m}{a} = 1,0463$

$a = 1,522$

$v = 1226,74 + 9,04 \times 47,232 + 18,8$

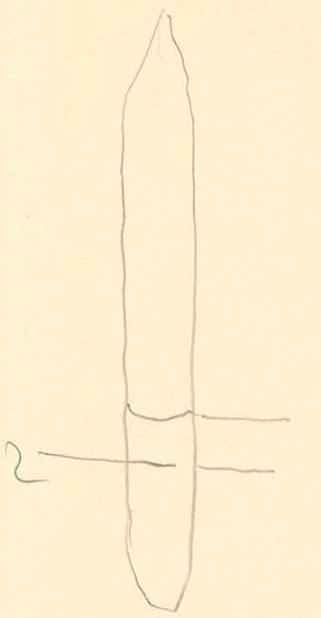
~~1234,1~~ 427,96
1230,8

$v = 1677,6$

$v + w = 9238,9$

7561,3

122,6



71,90
64,10
7,80

17) 293
24

29) 292
21

17) 293
23

1,463

$$v = 1226,74 + 7,8 \times 47,257 + 17,2$$
$$1201,1 \qquad 369,00$$

$$v = 1617,6$$

$$v + w = 9241,6$$

$$w = 7624,0$$

Elsye. I hónap első
már van 6. 1-én ők mentek 27-ig
134,2 Celsius

71,56
64,06
7,50

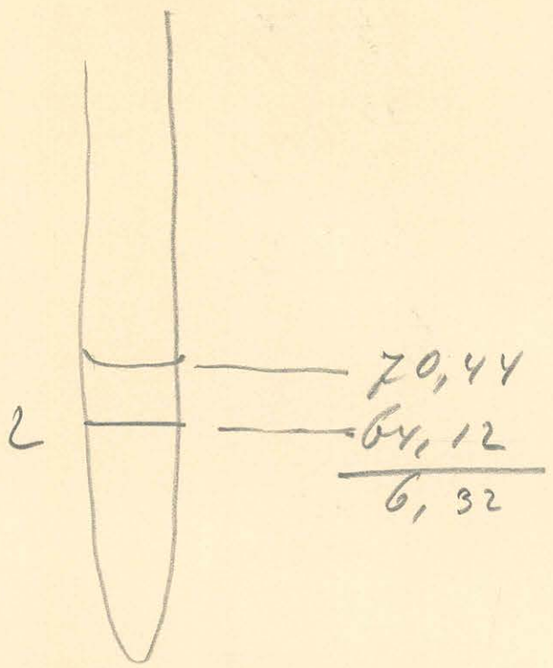
78
76
72
65 297.
60
65 195 194
70 290
60

1,470

$v = 1226,74 + 7,5 \times 47,237 + 16,6$
1231,1 253,720

$v = 1602,9$
$v + w = 9241,6$.
$w = 7638,7$

142° 0



Mein m.

40 274
14
10 275
05
40 274
14

1,370

$v = 1226,74 + 6,32 \times 47,207 + 15,5$

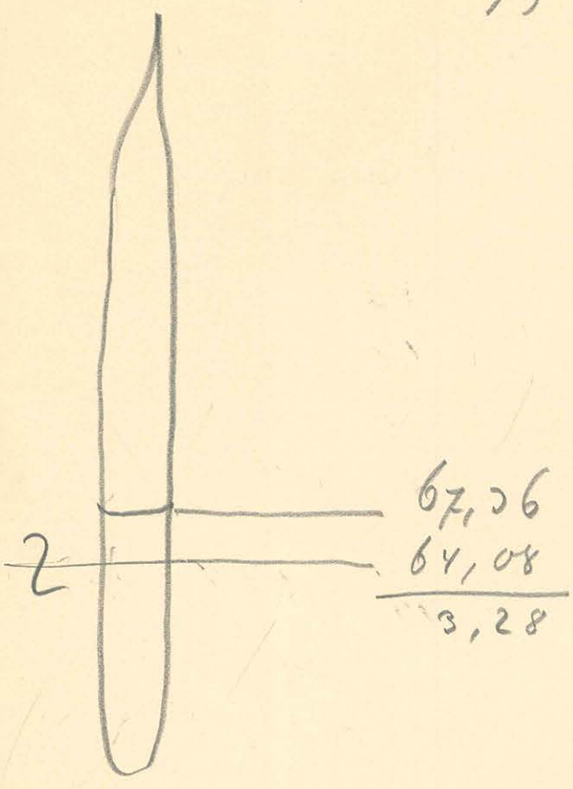
$1231,5 + 299,38$

$v = 1546,4$

$U + W = 9244,4$

$W = 7698 0$

$152,0^{\circ}$



97, 249
46

40, 249
91

95, 249
44

9
8

1,245

$v = 1226,74 + 3,28 + 12,0$

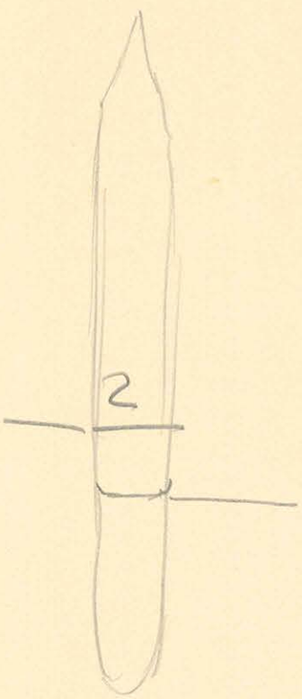
$1221,8 \quad 155,40$

$v = 1399,2$

$v + w = 9247,2$

$w = 6848,0$

163,2



71/88 217

82/64 218

65/82 217

1,085

$v = 1226,74 + 2 \times 42,22 + 9,4 - 1,80$

1222,1 85,20

8.

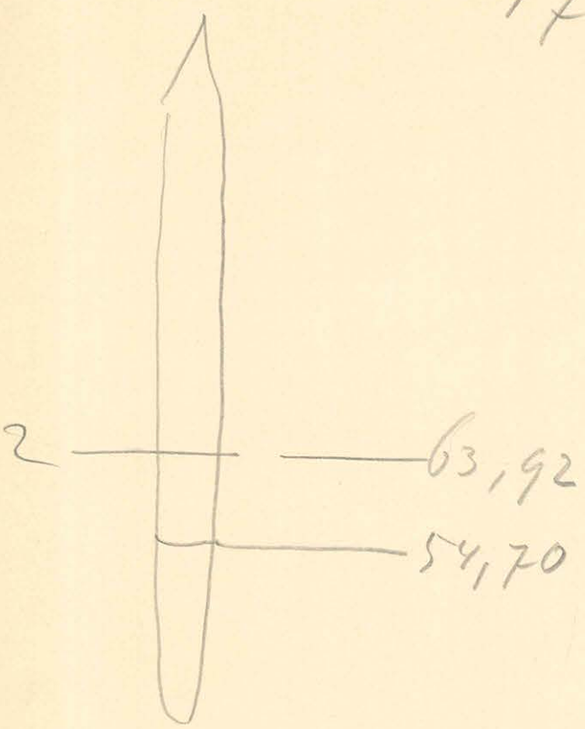
$v = 1156,2$

$v + w = 9250,0$

$w = 8093,8$

Glycerinban I. ülés
március 6.

174°5 C.



Mérés

1
66) 165

59
94) 165

58
65) 165

0,825

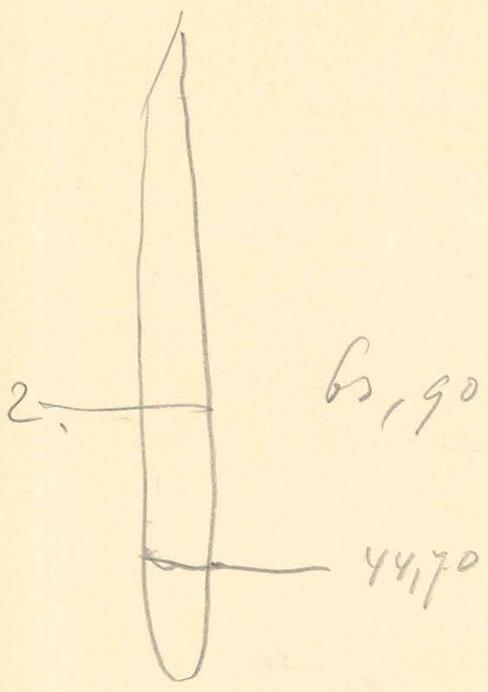
$v = 1226,74 - 9,22 \times 47,207 + 4,0.$
1232,5 407,01

$v = 799,5$

$v + w = 9252,7$

$v : w = 8453,2$

181 °C.



56 122
78

72
51 122

$$v = 1226,74 - 192 \times 47,237 + 2,7.$$
$$1232,8 \qquad 9010,22$$

$$v = 225,3.$$
$$v + w = 9255,5$$
$$8930,2$$

Mund für 182°0 mit $\sigma = \frac{1181,7}{9214} = 1,293$

Lebius Hendrik 5h. 10 Dm.

~~44,70 — 180°5~~

5h. 20 Dm 179 — Jó meisken — 95 / 58 — 157

5h. 42. 178,3 — 2 — 43,28 — 45 / 10 — 155

~~50,70~~ ----

174,5 C. meisken allen 57,06

Mezgun $\frac{80}{50}$ = 167 — ~~47~~ 46 — 169

6h. 5m. 54,70 en ---- 171° C.

- - - -

~~169,2 C.~~

6h. 22m 5m 62,50 en 162° C.

(Meisken 80 / 94) 214 — 92 / 78) 217.)

151,5 C. 67,36 (150,0) 6h. 55

140,4 70,44 (142,0) 7h. 20

71,56 (134,0)

72,80 (120,5)

73,48 (111,4)

15,5° nál

Az ideális $2^{\text{ö}}$ térfogata = 11,93 mgr. 1193 mgr.

a higanyos térfogata = 1635,05 köbcm.

a gáz térfogata w = ~~8204,8 köbcm~~ 7573,58 köbcm

Összes térfogat $V+w$ = ~~9839,85 köbcm~~ 9208,63 köbcm

a ~~1 kötet. rész nitrogénnek~~ $2^{\text{ö}}$-nek $\rho = 2{,}31$

$$3{,}3115 \cdot \frac{231}{760} \cdot \frac{290}{288} = 0{,}9541$$

hány a ρ.
$\beta = 361$ tehát
1 kötet oxigén ér
$\frac{361}{231} 0{,}9541 = 1{,}49$ mgr.

Lehet van benne ~~9,96~~ 7,22 térfog. gáz =
1185,8
1185,8 ~~+860~~ = ~~+860~~ térfog. higanyból, a higany
sűrűsége ~~s = 14600 / 1635,05 = 8,9282~~

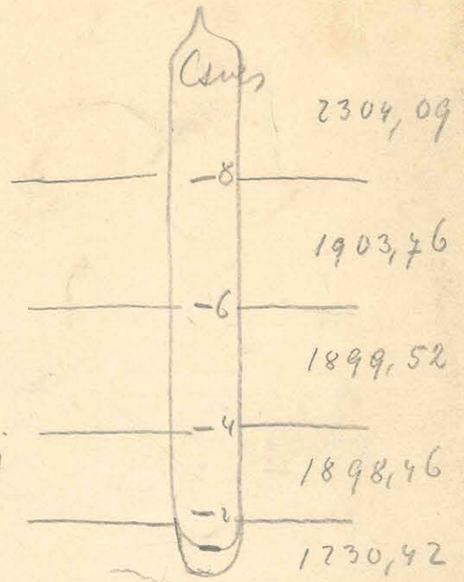
$$s = \frac{1185{,}8}{1635{,}05} = 0{,}72524$$

1 gr. ón hőfokát 12,5°-kal 1,00125
lengőben 1 gr. ón 1,00125 + 1,00149
= 1,0026.

+) Lehet van 11,3 térfog. oxigén és így
1181,7 térfog. higanyból

$$s = \frac{1181{,}7}{1635{,}05} = 0{,}7227$$

Temperatura 100° C°.



1 m.m-nek megfelelő térfogat:

	2304,09
47,545	1903,76
47,477	1899,52
47,331	1898,46
	1230,42

Üres térfogat $V = 9236,25$

A folyadék által kiszorított

$$V = 1230,42 + 10,18 \times 47,331 + 0,2 \times 47,331 + m.$$
$$482,78 \qquad 482,78$$

$$V = 1713,20 + m.$$

mennyiben kiszorított $m = \pi a^2 r - \pi r^2 h$ $r = 2,885$

$a^2 = 2,700$

$a = 1,643$

$\frac{r}{a} = 2,35$ $\frac{h}{a} = 0,1226.$

$m = 33,26 - 9,610 = 23,75.$

$V = 1736,95$

$W = 7499,30$

$\rho = 1193$ mg/cm³.

Szén CO_2 és alkohol $-71°$ Celsius.

mennyiben magyog $= 2,405$ $r = 2,882$. $\frac{r}{a} = \frac{1,614}{1,677} = 1,450$

$a = 2,677$ $a^2 = 7,168$

kiszorított $V = 1226,74 + 5,26 \times 47,237 +$ mennyiben.

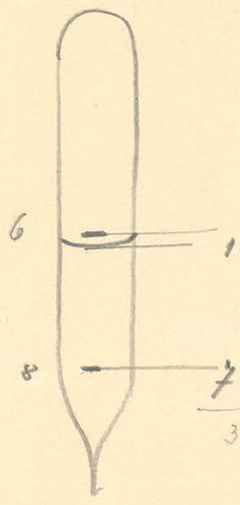
mennyiben kitett $= 87,414 - 50,189 = 37,225$

$\frac{m}{0} = 90,611$ $V = 1512,44$ $s = 0,7888$ $f = 2,827$

$f d^2_{-71} = 58,284$ $f d^2_0 = 42,75$ $\frac{d^2_{71} - d^2_0}{71} = \frac{15,534}{71} = 0,219$

II. mérési eset borra vetve

kezd. 96,8



6	110, 32	110,30	110,30	110,30
8	70, 65	70, 66	70, 65	70, 66
	39, 67	39, 64	39, 65	39, 64

$$V=\left(1+\frac{27}{10000}\right)\cdot 2314{,}7 + 39{,}65\left(1+\frac{15}{10000}\right)45787 + 22{,}1$$

$$V+W=\left(1+\frac{27}{10000}\right)8955{,}0$$

$$V = 2320{,}2 + 1818{,}7 + 22{,}1$$

$$V = 4171{,}4$$

$$V+W = 9001{,}9$$

$$W = 4830{,}5$$

Forró amylalkohol gőzben

temp. 130,0

6	81,04	81,03	81,02	81,02
	75,82	75,83	75,82	75,83
	5,22	5,20	5,20	5,19

6	161,38
	155,90
	5,48

Ugyanezen

Forró amylalkohol gőzben

temp. 129,5

							10m. után
6	85,22	85,24	85,24	85,26	85,28	85,30	85,30
	80,80	80,80	80,82	80,80	80,82	80,81	80,81
						4,49	4,49

		10m. múlva		10. múlva
Ugyanezen 6	49,68	49,70	49,72	49,74
	45,30	45,30	45,30	45,30
	4,38	4,40	4,42	4,44

~~4273~~ 4158,0 204,0

$4379,1 = V_{129,5} = \left(1 + \frac{26}{10000}\right) 4143,1 + 4,46\left(1 + \frac{24}{10000}\right) 45,631 + 17,1$

2)

$8986,2 = V + W = \left(1 + \frac{26}{10000}\right) 8954,83$

~~[illegible]~~ $\frac{1}{400}$ az higrométerben

$\frac{3}{1000}$ $v(1+d)^3$

$V = 4390,0$

$V + W = 9008,7$

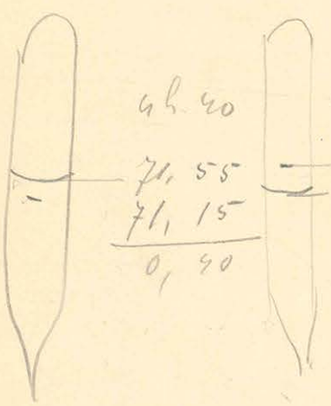
$W = 4618,7$

$p = 2632,0$

Forró vízgőzben

temp.

4h. 5m.	4h. 15m.		4h. 20m.		4h. 25m.		4h. 40
71,15	71,16	71,16	71,16	71,16	71,16	71,16	71
70,95	71,00	71,01	71,07	71,07	71,08	71,09	71,
0,20	0,16	0,15	0,09	0,09	0,08	,08	



4h. 40	4h. 45	4h. 50.
71,55	71,15	71,15
71,15	71,00	71,05
0,40		

II. „száraz" cső

temp. 100,1 – 0,4

Mester.

Mester

18
61 perc 343

59
16 perc 343

Nyers benzolos oplitolmosóval

95
54 perc 341 34225

59
1 perc 342

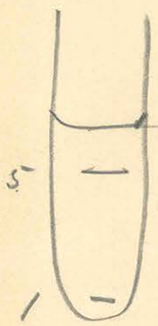
II cső forró alkoholban
temp. 78,9° – 0,6.

Mester

Mester

91
63 perc 372

60
89 perc 371



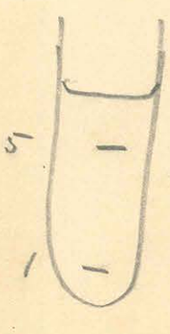
86 88 86,84 86,86
84,80 84,80 84,80

13
87 perc 368

78
9 perc 369

II. cső forró vízben
temp. 99,6 – 0,5

99,1



18,32 18,30 18,31
13,16 13,15 13,15

5116

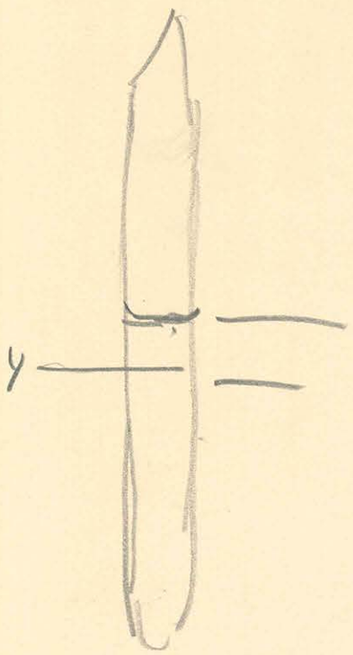
$v = 2983,86 + 25,18 \times 45,631 + 22,1 = 4165,1$

$2991,9 + 1151,1$

$v + w = 8478,0$ $w =$

Terg. 13,8

13° 9.



105,82 105,82
92,60 92,60
13,22

Mérés 87
18
13
81

4315
432

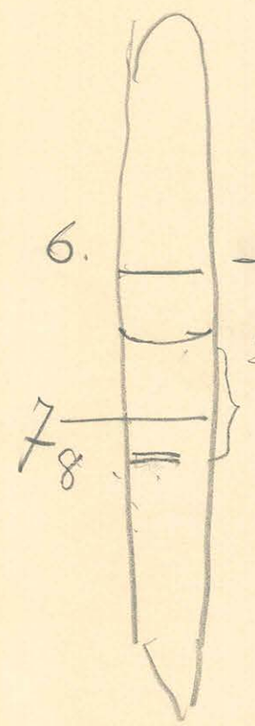
$a^2 = 5,244$

$V = 2983,86 + 13,22 \times 45,641 + m.$

~~9857,23 + m~~

9857,23 × 30,38

$V = 3617,61$



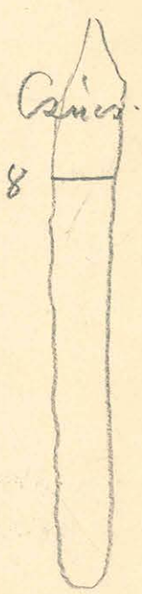
120,10 120,10
107,96 107,95
12,14

Csúcs + 27,80 × 45,787 + m =

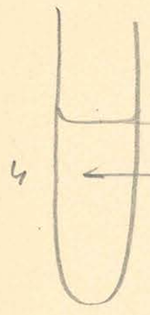
Csúcs = V − 27,80 × 45,787 − m

Csúcs = ~~2584,23~~

= 2314,3



olvadó jégben
temp. 1,3 −0,2



4	103,02	103,03
	~~90,87~~	90,86
	12,15	12,17

Nemes

52
96 ebből 444

95
52 ebből 443

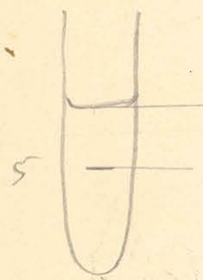
443,5

$V = 2983,86 + 12,16 \times 45,631 + \text{mért}$

(+ $V = 3581,3$ $\frac{1}{400}$ hígítandó

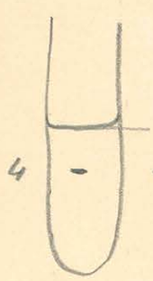
~~fon~~

forró alkoholban.
temp. 77,8



5	93,06	93,02
	91,14	93,13

Olvadó jégben.
~~temp. 1,7 0,2~~ temp. 2,6 - 0,2



4	~~130,24~~	130,28
	~~118,16~~	118,14
	12,08	12,10

2. kamni cso' zuja inesen

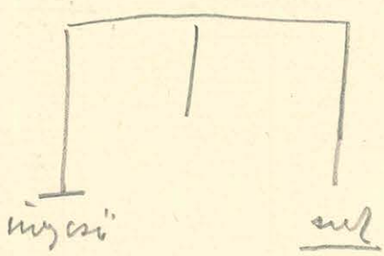
Nvolyo ataja inesen : 4,00

2,6 5,2
2,8 5,6
2,8 5,5
2,9 5,60
2,78

Eyenut = $\frac{2,78 + 5,00}{2} = \frac{8,38}{2} = 4,19$

3,5 5,0
3,5 5,0
3,6 4,9
3,6

3,55 4,97



$\frac{3,55 + 4,97}{2} = \frac{8,52}{2} = 4,26$

Nvolyen: ~~34,79~~ 34,801

3,6 4,4
3,6 4,4
3,6
3,60 4,40

Eyenut 4,00 Nvolyen = 34,802

34,0020

2. Üveges + acetes csúsz

3,4
3,4
3,5
3,43

5,1
5,0
5,05

Egység: $\frac{8,48}{2} = 4,24$

Üveges egység 0,05

4,19

Súly 37,413 gr.

Súly = 37,4132 gr.

3,5
3,6
3,6
3,7
3,60

4,4
4,4
4,3
4,37

Egység: $\frac{7,97}{2}$ · 3,99

Súly: 37,414 gr.

~~2 üveges~~.

Súly + csövek feltüntetve

5,8
5,8
5,7
5,78

4,5
4,5
4,50

Egység: $\frac{10,28}{2} = 5,14$

súly — cső

37,414 gr.

4,0
4,0
4,1
4,033

4,7
4,7

$\frac{8,73}{2} = 4,36$

Üv. egység: 4,19

0,18

— 0,003 gr

Súly 37,411 gr.

Súly 37,4103

Súly üveges.

3,5
3,5
3,6
3,53

4,9
4,8
4,85

$\frac{3,53 + 4,85}{2} = \frac{8,38}{2} = 4,19$

Vuoden tulos

2. Koe eso + aallot = 37, 4122 gr.

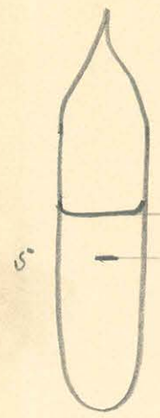
Lasi + Koe eso ilman = 34, 8010 gr.

Aallot maja = 2, 6112 gr.

2. számú cső glycerinben

Mérés. 8

Temp. 102,2



94,68
88,57
6,11

27,17

Mérések.

67 – 49 víz	318	1,59
55 – 44 víz	311	1,56
43 – 58 víz	315	1,58
58 – 47 víz	311	1,56
46 – 58 víz	312	1,56

Közép

Közép eltérés = 1,665

2. csőben lévő acélgolyó = 2,6112 gr.

v = (05) + 45,722 × 6,11 + men.

Mérési hiba = 1,685 a = 1,630

a² =

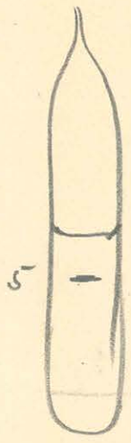
v =

v = 2991,96 + 1194,5 + 22,85

v = 4209,2

v + w = 8479,5

Lemp. 110,5°



96,24
88,68
7,56

$\frac{m}{\tau} = 6,43205$ $\frac{m}{a} = 1,0371$

$a = 1,557$ $a^2 = 2,425$

~~***~~

Mennicus leírtyak $u = 20,55$ köbmm.

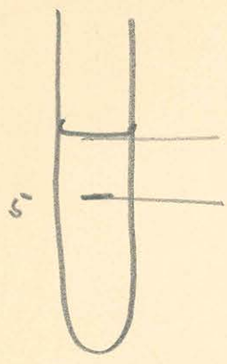
$V = (05) + 45,731 \times 7,56 +$ mennicus

$= 3910,74 + 345,73 + 20,55$

folyékony $V = 4277,02$

44
9 vonás 335
12
38 vonás 326
35
13 vonás 323
16
38 vonás 322
~~22~~
~~8~~ vonás
~~81~~ 328
gőzben
5
92 vonás 323 323
~~85~~ 333 $m = 1,615$
~~18~~ vonás
20
97 vonás 323
0
27 vonás 323

temp. 122,3



92,26 94,26
88,62
9,64

95
96 vina 299

99
98 clare 299 n = 1,495

93
94 vina 299

$\frac{m}{r} = 0,3998$ $\frac{m}{a} = 1,0505$

$a = 1,423$ $a^2 = 2,025$

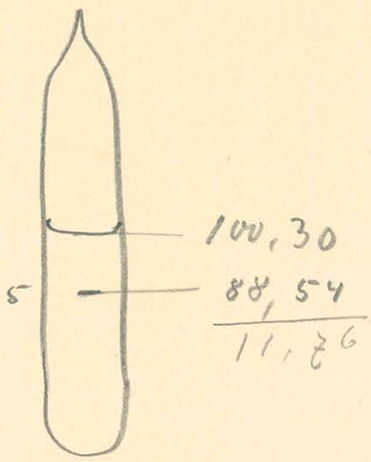
mean ker = n = 18,36

V = (05) + 45,740 × 9,64 + n

= 3911,91 + 440,94 + 18,36

V = 4371,21

Temp 133,7



m	
50	283
67 vina	
68	280
48 elővé	
44	284
60 vina	
63	281
44 elvi	
41	283
58 vina	
61	282
43 elvi	
	282

$\frac{m}{r} = 0,3771$ $\frac{m}{a} = 1,0577$

$m = 1,410$

$a = 1,333$ $a^2 = 1,777$

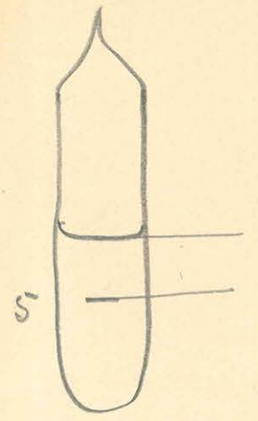
Menisk = m = ~~18,3~~ 16,84 kötr.m.m.

$V = (05) + 45,749 \times 11,76 + men.$

$= 3913,06 + 538,01 + 16,84$

$V = 4467,91$

kemp. 139,8 2 Spanische Schale (2)



101,58
88,42
13,16

Meniscus
80 skine 265
45 skine

42 269
73 vina

76 265
41 skine

36 266
70 vina

71 265
36 skine

31 267
64 vina

266,2

$\frac{m}{r} = 0,05560$ $\frac{m}{r} = 1,063$ $m = 1,331$

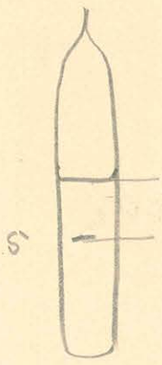
~~proinkus~~ $a = 1,252$ $a^2 = 1,568$

meniscus $= 15,07$

$V = (0,5) + 45,758 \times 13,16 + \text{men.}$
$= 3914,26 + 45,758 \times 13,16 + \text{men.}$
$= 3914,26 + 602,18 + 15,07$

$V = 4531,51$

Temp. 152,5°



104,92

88,46

16,46

$\frac{m}{r} = 0,3115$ $\frac{m}{a} = 1,0694$

$a = 1,090 \mid a^2 1,187$

Mercure

73 233
76 cm

3 233
76 mm

m 1,165

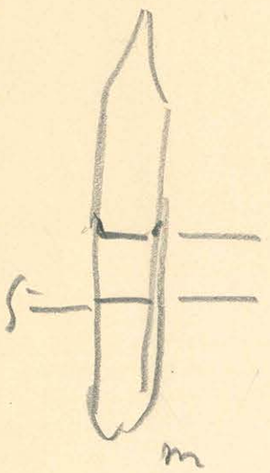
$n = 12,0$

$V = (05) + 16,46 \times 45,767 + \text{men.}$

$= 3915,43 + 750,20 + 12,0$

$V = 4677,63$

162°1



108,08
88,42
19,66

78) 202 79) 202
80 77

m = 1,07

$\frac{m}{r} = 0,2701 2$

$\frac{m}{a} = 1,0696.$

$a = 0,9442$ Meinem Lichtpunkt $u = 9,7$ hinzu.

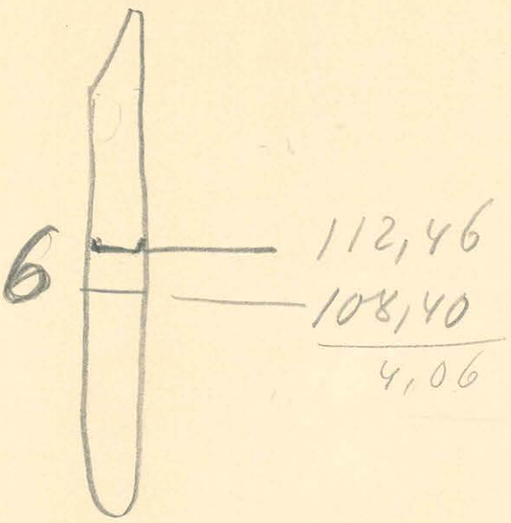
$a^2 = 0,8916$

$v = (05) + 19,66 \times 45,777 + u_{neu}$

$= 3916,60 + 899,99 + 9,7$

$v = 4826,29$

171° 4.



12) 159
71

68) 162
6

9) 159
68

65) 160
5

$\frac{m}{r} = 0,2142$ $\frac{m}{q} = 1,0622$ $m = 0,80$

$a = 0,7502$ $q^2 = 0,5673$.

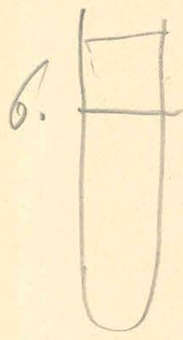
mennyi kifejezi $r = 6,7$.

$V = (0,6) + 4,06 \times 45,943$

$= 4826,26 + 186,53 + 6,2$

$V = 5019,49$ köbmm.

182°8 C.



$V = (06) + 13{,}00 \times 45{,}953 + \text{mem.}$

$= 4837{,}83 + 597{,}39 + 0{,}49$

4837,83
595,22

7,097
4

0
3 97.

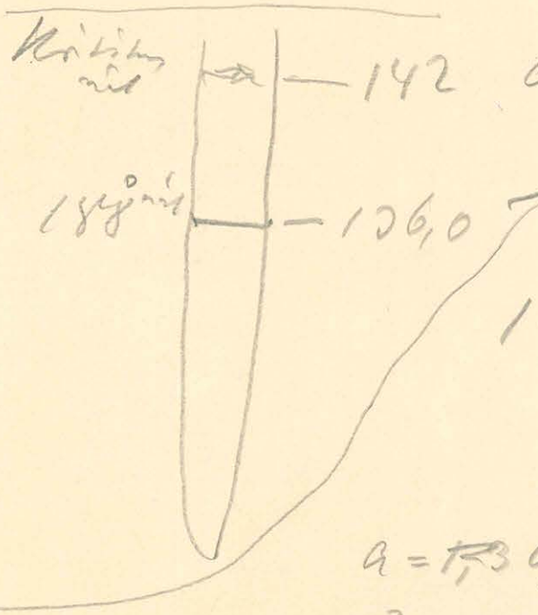
6
2) 96 m = 0,485

191,5 kritikus
1c

192° alatt elmúlás

188 felett virulás

Kritikus alatt



Kritikus alatt kitörés alatt elmúlás

188° m

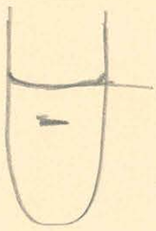
22) 30
60

m = 0,15

61) 30
31

a = 0,15

$a^2 = 0{,}0225$



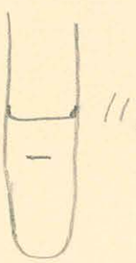
121,30 temp. 183,0

48
44 vina 104 ~~452~~

45
50 dex 105

47
43 sin 104

104,3 m = 0,522



112,46 temp 172,2

25
81 dex 156

79
23 156 = m

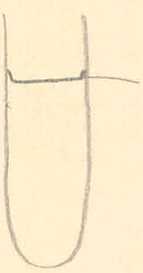
108,08 temp 162,3

65
62 vina 203

63
65 dex 202

63
61 vina 202

m = 1,01



104,92 temp. 152,6

57
23 vina 234

24
59 dex 235

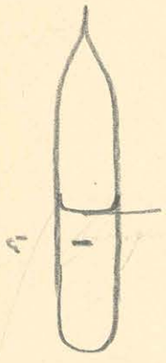
57
23 sin 234

101,58 temp. 138,9

45 2
78 vinna 267

81
49 clun 268

47
79 vinn 268

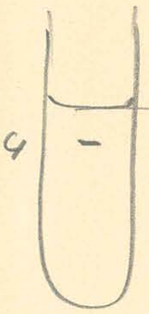


100,30 temp. 132,9

55
76 vinn 279

79
58 clun 279

Temp. 14,8 – 0,4



82, 68
64, 02

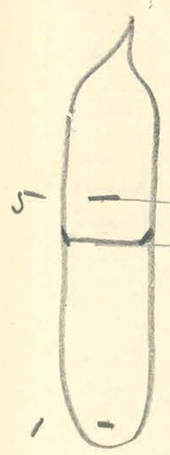
48
70 min a 428

~~23~~

21
49 dem 428

m = 2,140

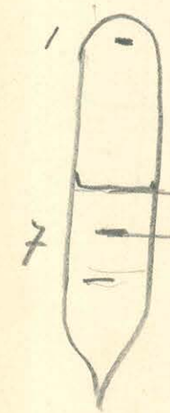
Megmaradt 2. cső



t = 16,0

5	116,85	116,83	116,78	116,78	116,78	116,80
1	110,72	110,62	110,63	110,60	110,62	110,63
	6,13	6,21	6,15	6,18	6,16	6,17

6/100 17 6,17.



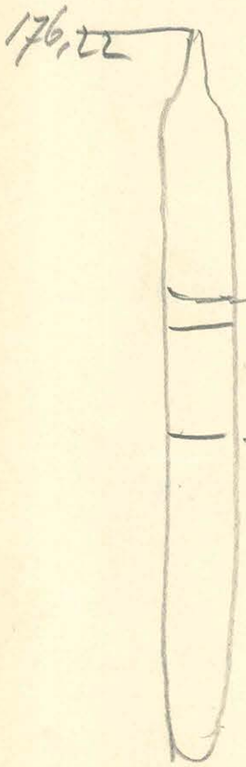
1	123,74	123,76	123,84	123,82	123,84	123,80
7	115,53	115,52	115,50	115,52	115,50	115,51
	08,21	8,24	8,34	8,30	8,34	8,29

Kritikus 191,5

~~Glycerin~~ ~~Cső + lencse~~ 117

8,29

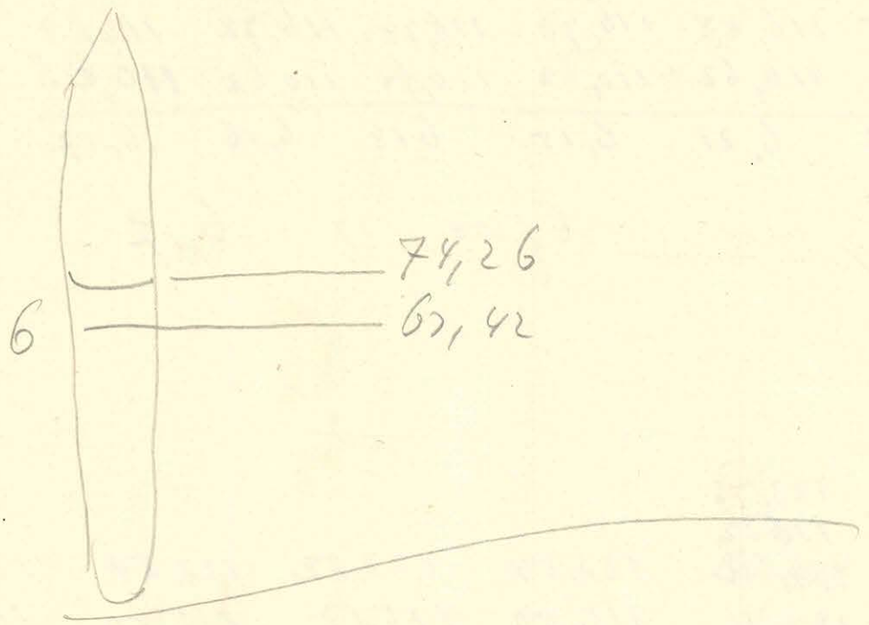
Cső + lencse − Cső + víz = 2611,2



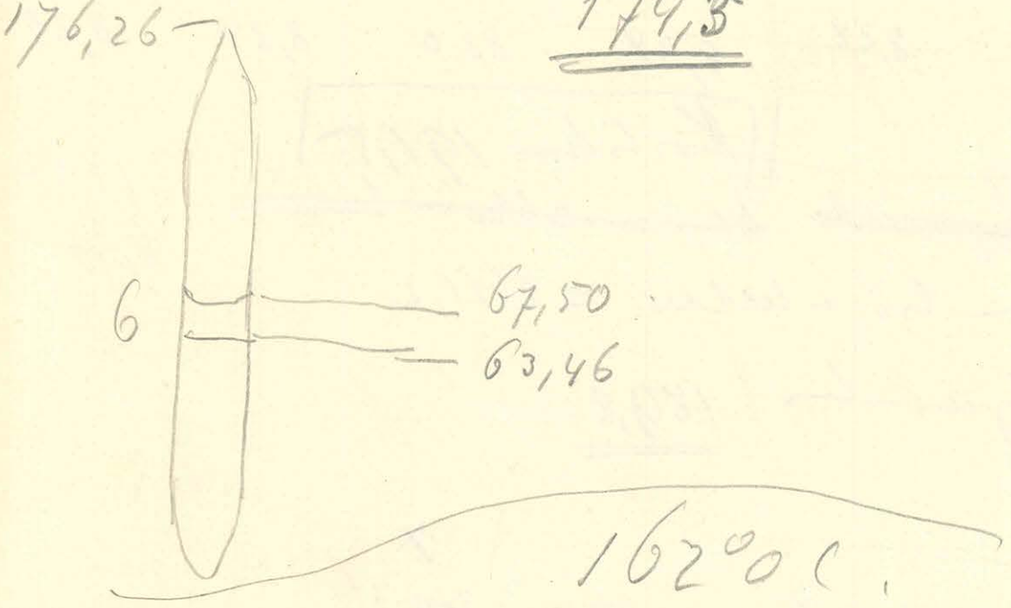
Glycerinban 189,8

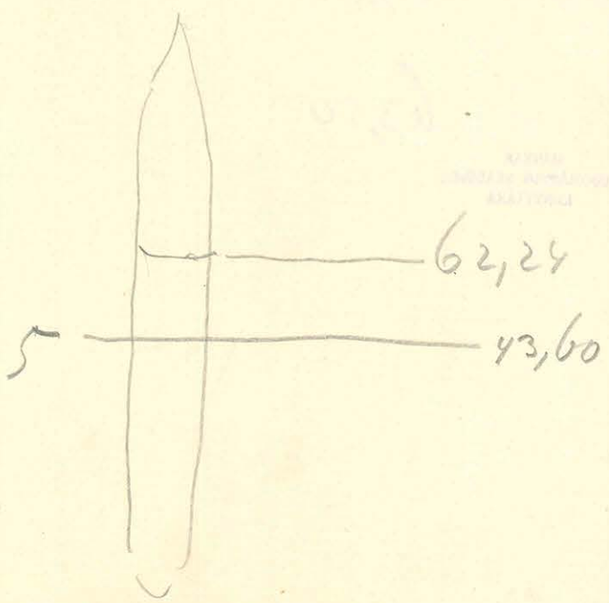
			x
	91,68	85,10	89,76
7			
6	63,44		63,50

185°2

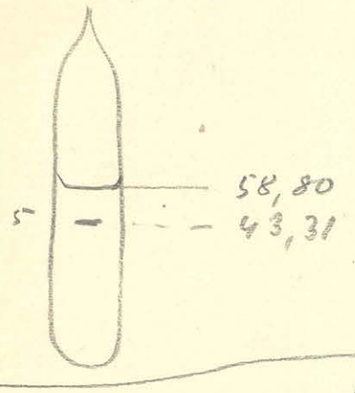


174°3

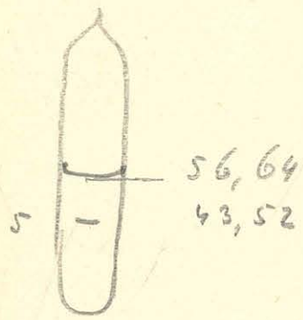




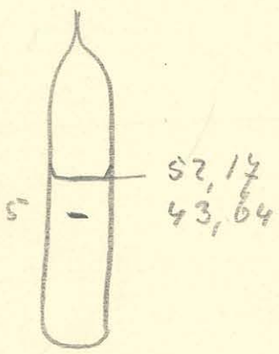
temperatura 150,5



temperatura 140,0



temperatura 130,0



56,64 temp. 140,2

91,68 temp. 189,5

58,80 temp. 150,0

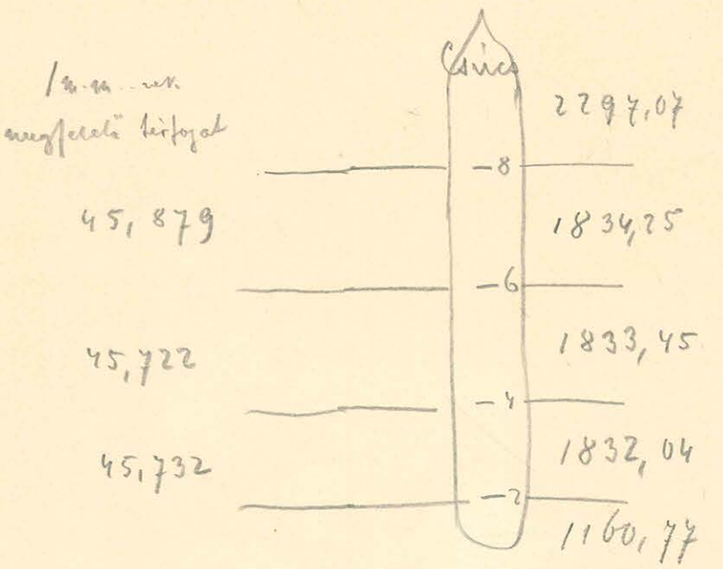
62,24 temp. 160,5

67,50 temp. 172,8

74,26 temp. 181,5

Temperatura 99,9 C.

Hőmérő kalibrálás $\frac{2}{1000}$



Üres térfogat $V = 8957,58$

Folyadékkal telített

$v = (0,2) + (2,41 + 25,38 \times 45,722 + m$

$v = 4153,23 + m.$

$r = 2,725$
$a = 1,605$

$\frac{r}{a} = 2,259 \quad \frac{h}{a} = 0,1276$

$m = \pi a^2 r - \pi r^2 h. = 32,07 - 9,97 = 22,10$

~~$v = 4175,3$~~,

$v = 4175,33$

100°.

$w = 4782,25$

$p = 2637,7.$

$$s = \frac{pw' - p'w}{vw' - v'w}$$

$$\sigma = -\frac{pv' - p'v}{vw' - v'w}$$

(p) $\quad p'$

$s\ v \quad s'\ v'$

$\sigma\ w \quad \sigma' w'$

$p\ v\ w \quad v' w' p'$

$t \quad v s + w\sigma = p,$

$t \quad v' s + w'\sigma = p'$

$$\left(\frac{\mu}{s}\right)^{\frac{3}{2}}$$

$$f = \frac{a^2}{2}(s - \sigma) \qquad \frac{\Delta f \lambda^2}{T \Delta T} = \text{állandó}$$

$$z = \frac{a^2}{2}\left(\frac{1}{\rho_1} + \frac{1}{\rho_2}\right) \qquad \lambda'' \quad \frac{\mu}{s} = \lambda^3$$

$$\left(\frac{z}{a}\right) = \frac{1}{2}\left(\frac{a}{\rho_1} + \frac{a}{\rho_2}\right)$$

$$\frac{a}{r} = \frac{a'}{r'}$$

$$\frac{m}{a} = \frac{m'}{a'} \qquad \left(\frac{r}{m}\right) = \left(\frac{r'}{m'}\right)$$

$$\left(\frac{r}{a}\right) = \left(\frac{r'}{a'}\right)$$

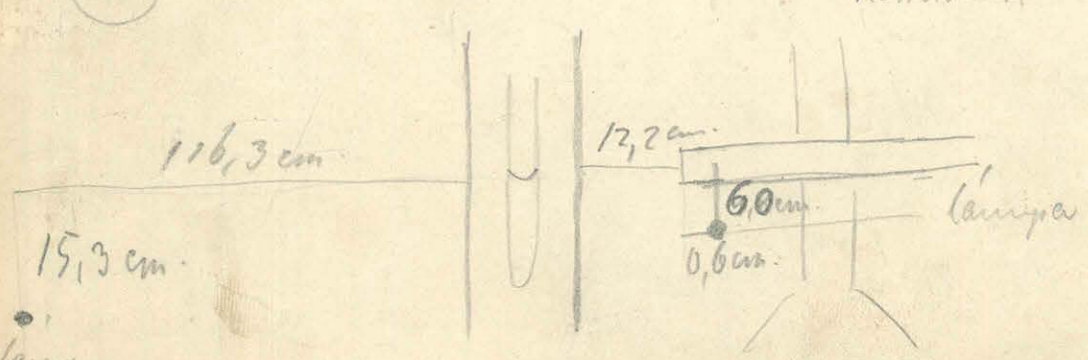
Ms 5097/54

Ph Kalsav analysed

dőre	17,5 54	) 436,5	
dőre	19,0 56,5	) 437,5	
vin	55,5 19,0	) 436,5	
dőr	23,0 60,6	437,0	
vinn	56,0 20,0	) 436,0	
dőre	22,0 58,0	) 436,0	
vina	54,0 17,5	) 436,5	
dőr	20,0 56,0	) 436,0	
vin	53,5 17,5	) 436,0	
dőr	20,5 56,5	) 436,0	Atomsúly: 542,0

5	79,75	79,73	79,73	79,75	79,75
	74,91	74,93	74,91	74,93	74,94
4	59,69	59,69	59,68	59,69	59,69

Kalktömb



Ujra összeállítva 1893. márc. 10-én Kjellmanéval

Súly 15,2 Ellenáll. 536,8

Ellenáll. 612,5 t = 159.9

— 57,0 / 39,5) 482,5 — 63,0 / 43,0 480,5

39,0 / 60,0 479,0 — 65,0 / 45,0) 480,0 — 41,0 / 61,5) 479,5

66,5 / 46,5) 480,0 — 43,5 / 64,0) 479,5 — 66,5 / 46,5) 480,0

5— 83,60 83,60 83,57
72,40 72,38 72,38
4— 63,55 63,55 63,54

Tömítő

52,6 / 45,9 173,3 — 46,0 / 52,8) 173,2

52,5 / 56,6) 173,5 — 46,0 / 52,8) 173,2

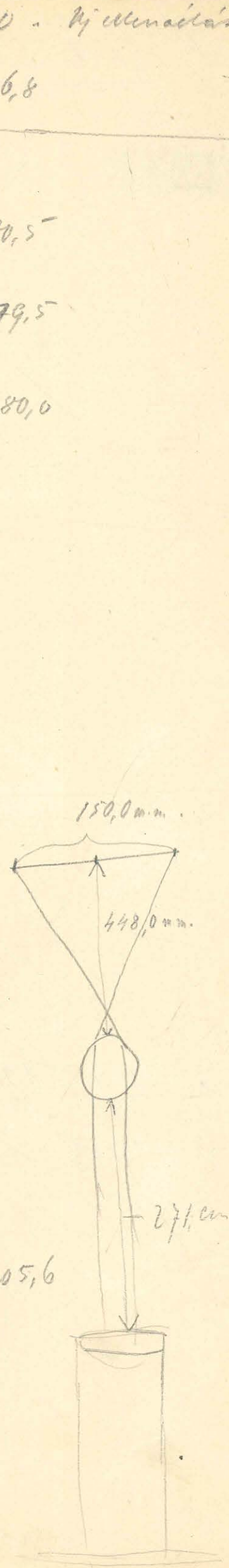
52,6 / 45,9) 173,3

Ellenáll. 612,5

Rugalmas

6,5 / 21,5 705,0 — 42,9 / 28,5) 705,6

10,0 / 24,2) 705,8 — 43,5 / 28,5) 705,0



agyi magassága

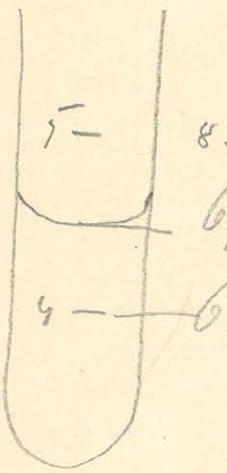
eggel 11. 30. Ellenáll: 598,0 ~~t = 139,7~~

Torzsmutató

vízs 45,9 / 57,5) 168,4 di 56,0 / 44,7) 168,7 vi 46,0 / 57,8) 168,2

dűre 87 / 79,0) 498,0 vi 76,0 / 78,0) 498,0 di 77,0 / 74,0) 497,0

vi 87,0 / 84,0) 497,0 di 76,0 / 73,5) 497,5



5 — 83,82 83,82

69,14 69,15

4 — 63,77 63,78

Reggel 9h. 20

Ellenáll: 597,5 ~~t = 139,7~~ 131,3.

dűn 58,0 / 61,0 503,0 vi 55,0 / 55,0) 500,0 di 61,5 / 60,5) ~~500,0~~ 499,0

vi 55,0 / 55,0) 500,0 di 63,5 / 62,5) 499,0 vi 58,0 / 59,0) 499,0

di 65,0 / 64,5) 499,5

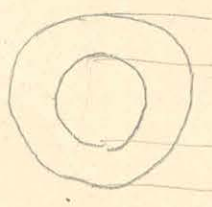
$m = \{10,0; 9,0; 10,0; 9,0; 9,0; 9,5\} = 56,5 = 499,5 = 2,4975$ m.m.

5 — 83,83 83,82

68,92 68,92

4 — 63,76 63,77

R. r. mm-ben.



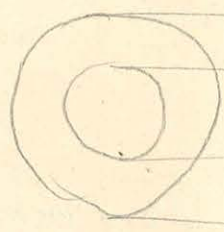
75,88 75,87

74,30 74,31) 14,78 / 14,79) 17,94 / 17,92

59,52 59,52

57,94 57,96

90°-kal eltolva.



75,80 75,80

74,26 74,24) 14,78 / 14,76) 17,96 / 17,90

59,48 59,48

57,96 57,90

Tovšin mutato

din 57,0 / 45,2) 168,2 vin 45,3 / 57,1) 168,2 din 57,0 / 45,5) 168,5

vin 45,5 / 57,7) 168,2

Mervin 11. eggel 12h 30. Eclentlig 633,6 t = ~~239,1~~ 214,7

~~2~~ 3,0 / 54,0) 451,0 vin 50,0 / 0,0) 450,0

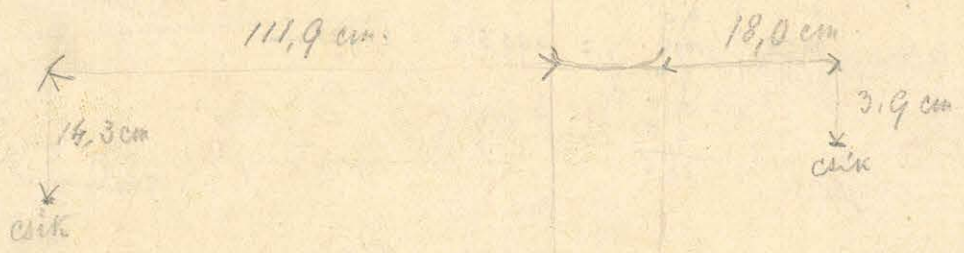
din 9,0 / 59,5) 450,5 vin 54,0 / 3,0) 451,0 m = 1,0 / 0,0 / 0,5 / 1,0 / 2,5 } = 450,5 = 2,25 25

5	83,32	83,32
	78,64	78,65
4	63,24	63,25

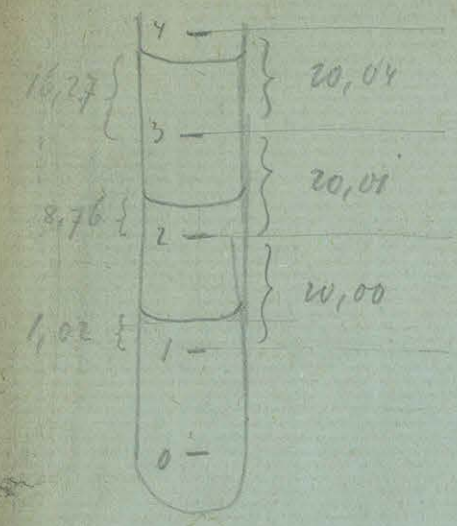
Tvärmutato

~~din~~ 45,0 / 42,1) 177,1 vin 42,2 / 45,0) 177,2 din 42,2 / 40,0) 177,8

42,2 / 44,5) 177,7

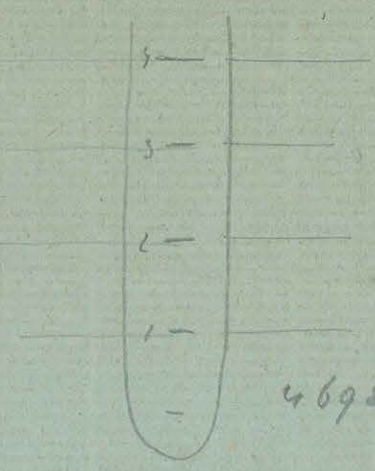


Phthalsav 1. mérni cső"



1 mm = 187,8 mm³
(2,25959)

1 mm = 180,2 mm³
(25575)



3643,3
~~3605,8~~
3604,0
4698,45 mm³

A alsóbol mennyiség levezetése

$u = a^2\pi - r^2\pi h$ $r = 7,52$

17,7 mal $a^2 = 5,766$ $a = 2,401$ $\frac{r}{a} = 3,132$ $\frac{h}{a} = 0,0433$

$h = 0,1040$

$u = 136,22 - 18,47 = 117,75$ kbmm.

27 ~~1~~ $\frac{180,2 \times 20}{3604,0}$ $\frac{187,8 \times 20,04}{3676\ 72,72}$
18 3643,3

Kerüls. 294,7

Mennyiség levezetése u

$u = a^2\pi - r^2\pi h$

$a^2 = 4,153$ $\frac{r}{a} = 3,690$ $\frac{h}{a} = 0,0207$ $h = 0,0422$

$u = 98,12 - 7,50 = 90,62$ mm³

A lefaragott levezetés = (03) + 4,14 × 187,8 mm³ + mennyiség
= 11908,3 + 752,7 + 90,62

$V = 12751,6$ Volumen.

Lemp = 224,0

$a^2 = 5,099$ $\frac{r}{a} = 3,330$ $\frac{k}{a} = 0,0332$ $k = 0,0750$

$u = 120,47 - 13,32 = 107,15$ kubikm

Fojadék térfogat $V = (03) - 0,89 \times 180,2 +$ menesen

$= 11908,3 - 160,4 + 107,15$

$V = 11855,1$

Lemp 148,1

$a^2 = 6,121$ $\frac{r}{a} = 3,040$ $\frac{k}{a}$ 0,0489 $k = 0,7210$

$u = 144,60 - 21,50 = 123,10$

Fojadék térfogat $V = (02) + 14,78 \times 180,2 +$ menesen

$= 8802,5 + 2663,3 + 123,1$

$V = 11088,9$

Lemp 134,2

$a^2 = 6,305$ $\frac{r}{a} = 2,995$ $\frac{k}{a} = 0,0519$ $k = 0,1303$

$u = 149,95 - 23,15 = 126,8$

Fojadék térfogat $V = (02) + 14,20 \times 180,2 +$ menesen

$= 8302,5 + 2558,8 + 126,8$

$V = 10988,1$

Kloroformmérés cső nélkül.

Tarával

	5,8
4,3	5,8
4,3	5,8
4,3	5,8

Eredmény = $\frac{10,1}{2}$ = 5,05

Súllyal

Súrlyok 34,690

	5,2
4,1	5,2
4,1	5,2
4,1	5,2

Eredmény = $\frac{9,3}{2}$ = 4,65

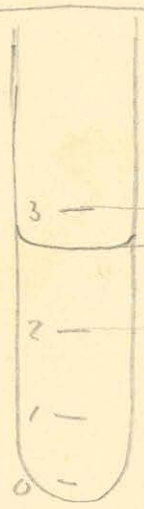
Súrlyok 34,685 gr.

4,6	
	7,3
4,6	
	7,2
4,7	
4,63	7,75

Eredmény = $\frac{11,88}{2}$ = 5,94

Hőm
5 mg = 1,29 osztás
1 osztás = 3,9 mg
0,4 osztás = 2 mg

Csőtörzsem = 34,688 gr.



57,84 57,83
52,20 52,20
37,86 37,86

10 cm³ alkohol
Súly 15,2

Tarával

4,2	5,6
4,3	5,6
4,3	
4,27	5,6

Eredmény = $\frac{9,87}{2}$ = 4,94

Súllyal

Súrlyok 47,120 gr.

	6,7
4,6	
	6,7
4,7	
	6,7
4,65	6,7

Eredmény = $\frac{11,35}{2}$ = 5,68

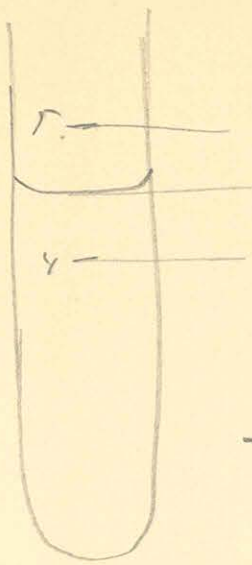
Súrlyok 47,125 gr.

3,7	
	5,0
3,7	
	5,0
3,8	
3,73	5,00

Eredmény = $\frac{8,73}{2}$ = 4,37

5 mg = 1,29 osztás
1 osztás = 3,9 mg
0,5 " = 2 "

Cső + Kenőke + dugó + alkohol = 47,123 gr.
Cső + alkohol = 42,792



92,45 92,45
~~8[illegible]~~ ~~8[illegible]~~ 83,69 83,71
72,47 72,48

kmg 15,4

16 cm³ alkal

Lúgból

Tárával

4,3 5,0
4,3 5,0
4,3
4,3 5,0

Egyenes = 4,65

Mérleg 51,9 80 gr.

4,2 5,6
4,2 5,6
4,3
4,23 5,60

Egyenes = 9,83/2 = 4,92

Mérleg

1 oxálsav = 3,9 mg
0,27 oxálsav = 1 mg

Cső + kaucsuk + olaj + alkohol = 51,981 gr

Cső + alkohol = 47,650

A kaucsuk dugó súlya

Lúgból

Tárával

5,7
4,8 5,7
4,8 5,7
4,8 5,7

Egyenes = 10,5/2 = 5,25

Mérleg 4,330

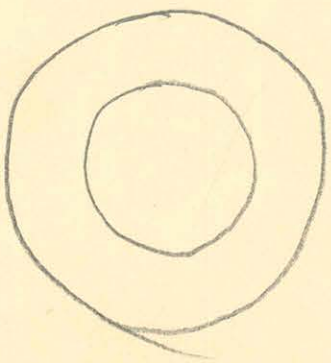
7,1
4,2 7,0
4,3 7,0
4,25 7,03

Egyenes = 11,28/2 = 5,64

Mérleg 4,335 gr.

4,1
4,1 4,7
4,1 4,7
4,1
4,1 4,7

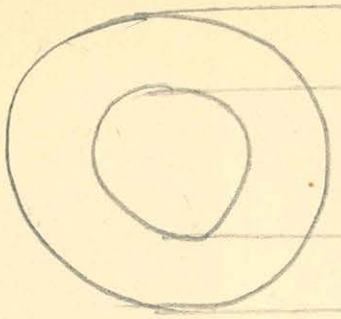
Egyenes = 8,80/2 = 4,40



5 mg = 1,24 oxálsav
1 oxálsav = 0,40 oxálsav
0,29 oxálsav = 0,1 mg

Kaucsuk + dugó súlya = 4,331 gr

A alkohol sűrűsége = 0,814



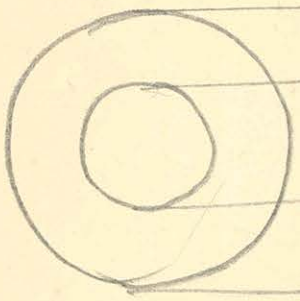
82,89 82,90

81,39 81,40

66,39 66,39

64,92 64,92

90° rel fugalva.



84,97 84,98

80,40 80,40

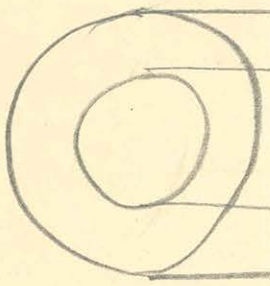
66,39 66,38

64,83 64,83

14,01 14,02 17,14 . 17,15

2r = 14,00

90° rel fugalva



84,95 84,95

80 29 80,30

~~66,33~~ 66,31 66,31

~~64,66~~ 64,68 64,68

17,27 17,27

13,98 13,99

Cso" + diphenylamin

Terával

	4,7
4,0	4,7
4,0	4,7
4,0	4,7

Eppen = 4,50

Lugol

Zöldes 46,170 gr.

	7,2
4,5	7,2
4,5	7,2
4,5	7,2

Eppen = $\frac{11,7}{2}$ = 5,85

Zöldes 46,175 gr.

	5,2
3,8	5,2
3,9	5,2
3,85	5,20

Eppen = $\frac{9.05}{2}$ = 4,53

Cso" + diphenylamin = 46,175 gr
Cso" + levego" = 34,688 gr

Diphenylamin - levego" = 11,487 gr.
levego" = 0,014 gr.

Diphenylamin. = 11,501 gr.

Ľ ätvrš

H	E
2 80) 81	1' 25) 78,5
1 99	1 3,5) 80
1' 21) 78	2 83,5) 80

79) 80
99) 78
21) 78

25
3) 78
83) 80

80) 81
99) 81
21) 78

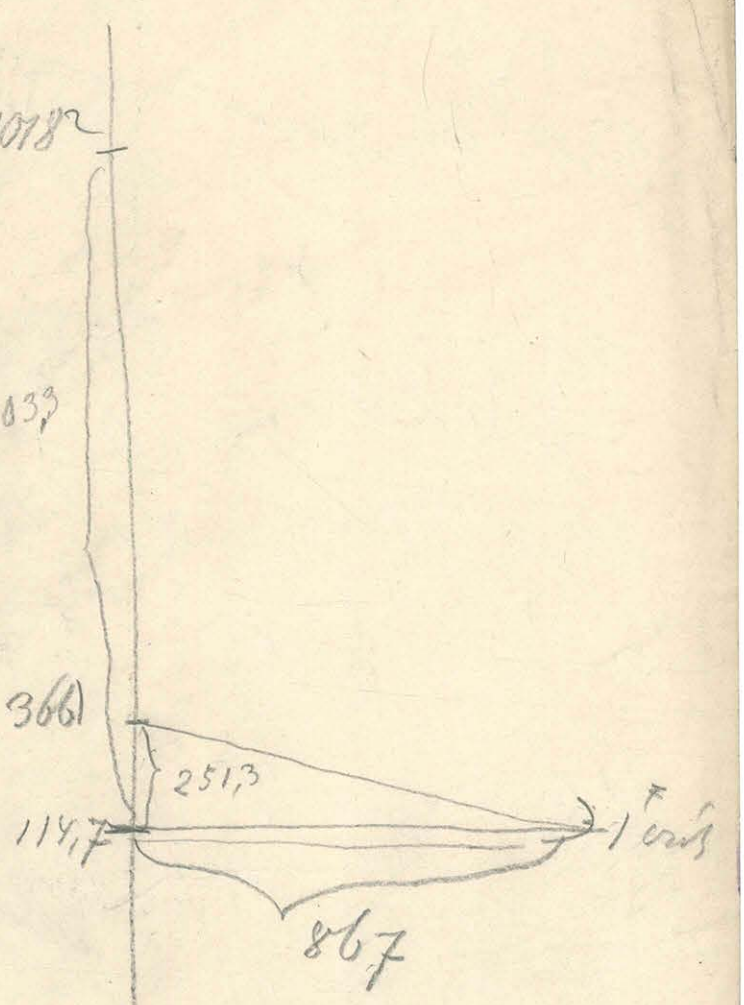
25
3) 78
83) 80

80) 80
0
22) 78

25
3) 78
82,5) 79,5

80) 80
0
22) 78

25
3) 78
83) 80.



kúp 2) 80,15
1
1' 78,05

$\delta_2 = 66°54'$
$\delta_1 = 87°57\frac{1}{2}'$
$a_{12} = 2,7159$
27 (1)

$x_2 - x_1 =$ ~~0,4082~~
$x_2 - x_1 = 0,4016$
$x_1 - x_1' = 0,3904$
$a_{21'} = 2,7902$
27 247

$N_{12} = 0,14784$
$N_{11'} = 0,14299$

kúp Klapaty Zahorská

80,15
80,15
~~80,00~~ 80,65

~~80,00~~ (2,1)
3

$\delta_1' = 98°23'$

7 5,1
78,15
78,00

δ reflectio helga
14' 40"

25,5) 78,0) 80,5
3,5) 80
83,0) 79,5) 78,5
0,5
22,0

25) 78) 80,5) 81,5
3) 79
82,5) 79,5) 79
0
21

Pfaltzer Lövésmutatója

$2R = 17,92$ mm. $\quad 2r = 14,78 \quad a = 75,0$ m.m.

$R = 8,96 \quad r = 7,39 \quad l = 448,0$ mm.

Hg Emission 5975 Lemp = 132

~~x = 499,4~~

$R = 705,4$

$x = 168,3$

$\delta = 45.070°$ $\quad \delta = 13.803$

$\varepsilon - \delta = 0.134°$ $\quad \varepsilon - \delta = 0.045$

$\varepsilon = 45.204°$ $\quad \varepsilon = 13.848$

$\vartheta = 10.254°$ $\quad \vartheta = 9.621$

$\rho - \gamma = 6.446$ $\quad \rho - \gamma = 119.37°$

$n = 1,526$

Emission 6336 Lemp 214

$x = 177,5$

$\delta = 14.574$

$\varepsilon - \delta = 1,057$

$\varepsilon = 14,631$

$\vartheta = 9.658$

$n = 1.486$

3,012

1,506

1,333 : 1,506 = 0,885

1 2088

12820

12048

7720

14,3 × 0,885

3540

2655

12655 5

14,3

1,6

0,885 × 3,9

2655

7965

3,4515

3,9

0,45

78,64

68,92

147,56

73,78

78,64

4,86

0,5

14,3

13,8

0,885 × 13,8

2655

7080

12,2136

14,3

2,1

1893. Május csüt 8

Uj platina ellenállás a (Erlenbach ismertnyben 2 ohm)

Olvadó jég ben 535,5 temp 0,0°

Forró vizben 589,9 temp 99,0

Barometer 748,1 temp 17,0

$w_t = w_0 (1 + \alpha t + 0{\cdot}000000594\, t^2)$

$w_0 = 2{\cdot}2760$

$w_t = 2{\cdot}8493 \quad t = 99,5$

$\log 0{\cdot}57333 = 0{\cdot}75838-1$

$\log w_0 = 0{\cdot}35717$

$0,40121-1$

$\log t = 1,99782$

$0{\cdot}40339-3$

$\log 535,5 = 2,72835$

$\log 464,5 = 2,66699$

$0{\cdot}06136$

30103

$0{\cdot}36241$

$w_0 = 2{\cdot}3036$

0276

$2{\cdot}2760$

$\alpha = 0{\cdot}0025\,16$

000059

$0,002457$

$0{\cdot}594 = 0,77379-7$

$1,99782$

$0,77161-5$

$\log 589,9 = 2{\cdot}77078$

$\log 410,1 = 2,61289$

$0{\cdot}15789$

30103

$0{\cdot}45892$

$\alpha = 0,002457$

$w_t = 2{\cdot}8769$

0276

$2{\cdot}8493$

$t = 15,2 \quad w_t = \frac{536,8}{463,2} 2 = 2,3188$

276

$\log 2,2902 = 0,35988$

$\log 1,03735 = 0,01593$

$0,37395$

$w_0 = 2,2078$

$\log 536,8 = 2,72987$

$\log 463,2 = 2,66577$

$0,06404$

30103

$6,36507$

$\log \alpha = 0,39041-3$

$\log t = 1,18184$

$0,57225-2$

$1,03735$

$\log \alpha^2 = 0,78082-6$

$0,000000\,60370$

07894

$52476 = 0,71996-6$

$\log V = 0,35998-3$

$V = 0,0022907$

2457

$\log 0,000166 = 0,22011-4$

$07482-6$

14529

$t = 139,7$

$\log 851,5 = 2,77634$

$\log 402,5 = 2,60477$

$0,17157$

30103

$0,47260$

$2,96699$

0276

$2,94423$

$2,2078$

$\log 0,7335 = 0,86540-1$

$\log w_0 = 0,34395$

$0,52145-1$

60206

$77379-7$

$0,89730-7$

$77379-7$

30103

$07482-6$

$t = 131,3$

$\log 635,0 = 2,80182$

$\log 366,4 = 2,56396$

$0,23786$

30103

$0,53889$

$V_{100} = 3,4585$

276

$3,4309$

$2,2078$

$\log 1,2231 = 0,08746$

34395

$0,74351-1$

60206

$77379-7$

$0,11936-6$

$t = 214,7$

$000000\,60370$

13163

$247207 = 0,67400-6$

$\log V = 0,33700-3$

$V = 0,002173$

2457

$\log 000284 = 0,45332-4$

07482

37850

$t = 239,1$

$$\frac{2{,}7871}{2{,}5882} = 1{,}3871$$

$$\frac{0{,}19884}{3{,}103} \quad \frac{3{,}1614}{276} \quad \frac{3{,}1338}{2{,}028} \quad \frac{0{,}46661}{3439} \quad \frac{0{,}6100}{0{,}4266} \quad \frac{0{,}4998}{0{,}4998}$$

$$\frac{0{,}4266}{0{,}4998} = 0{,}8536$$

$$\frac{0{,}6100}{0{,}4266} = 1{,}4297$$

$$\frac{7379}{0{,}9865} = 7379 \cdot 1$$

$$\frac{0{,}9865}{1} = 0{,}9865 \cdot 1$$

$$1{,}4297$$

$$\frac{0{,}3790}{9699} \quad \frac{7006}{1{,}2275} = 0{,}3579 \cdot 6$$

$$\frac{2647}{2457} \quad \frac{7016}{2039} = 0{,}2782$$

A 2. számú vízi csó súlya üresen

súly | üres

Tárával

súly	üres
	7,4
4,3	7,4
4,3	7,3
4,30	7,37

$\frac{11,67}{2} = 5,84$ egyed

Súlyal

súly	üres
3,4	
	4,4
3,4	4,4
3,4	
3,4	4,4
	6,5
4,3	6,3
4,3	6,2
4,3	6,2
4,3	6,2
4,3	6,22

Mérlegen 58,410 gr.

Egyed = 3,90

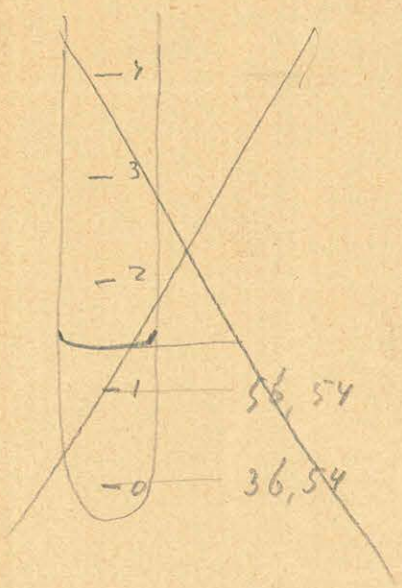
Mérlegen 58,415 gr.

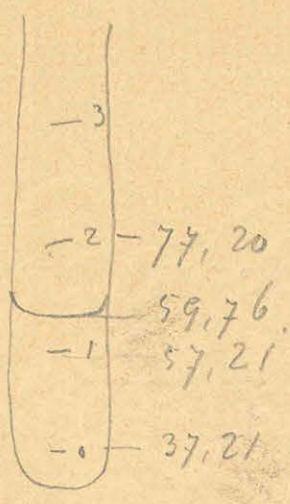
Egyed $\frac{10,52}{2} = 5,26$

Közép = 6,0

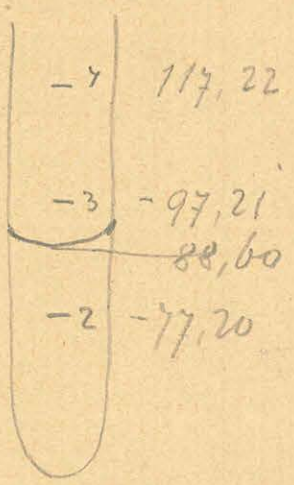
Az üres vízcső súlya = 58,414 gr.

A 2 micro calibrados





5 cm³



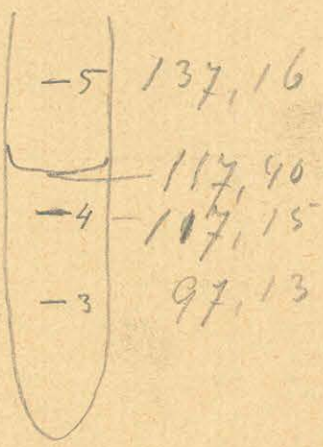
117, 16

97, 15

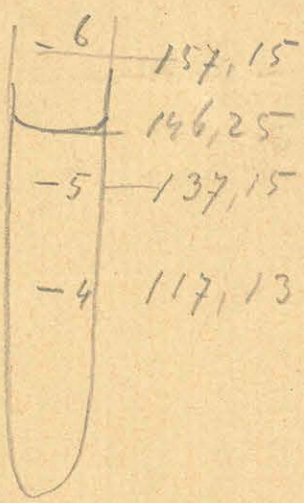
~~88,54~~ 88,54

77,14

10 cm³



15 cm³

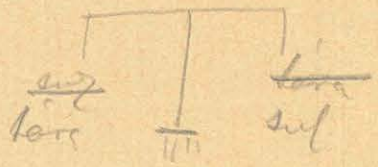


20 cm³

temp = 17,8

A 2. számú vegyes anyag 20 cm³-ével

Tavával



4,7
4,3 4,6
4,3 4,6
4,30 4,63

$\frac{8,93}{2} = 4,47$ = Egyenes

Anyával

Mérleg = 78,450 gr

5,3
3,6 5,3
3,6 5,3
3,6 5,3

$\frac{8,9}{2} = 4,45$ = Egyenes

A vegyes + víz anya = 78,449 gr.

Tenyo = 6,1

sul Terra

Mérleg 78,450 gr.

4,6 7,2
4,6 7,2
4,7

Egyenes: $\frac{4,63+7,2}{2} = \frac{11,83}{2} = 5,91$

Mérleg 78,445 gr.

3,2 5,9
3,2 5,8
3,3
3,22 5,85

Egyenes: $\frac{9,07}{2} = 4,53$

2. sarim eső fitkalsav analysis DDl.

Tárgyval

4,5	
	7,6
4,5	
	7,5
4,6	7,5
4,6	
4,55	7,53

Egyenl. = $\frac{12,08}{2}$ = 6,04

Lyssal

4,8	
	9,1
4,9	9,0
5,0	8,9
5,1	
4,95	9,0

Összeg = 78,420 gr.

Egyenl. = $\frac{13,95}{2}$ = 7,98

Összeg 78,425 gr

	6,7
4,6	6,7
4,7	6,6
4,7	6,6
4,67	6,65

Egyenl. = $\frac{11,32}{2}$ = 5,66

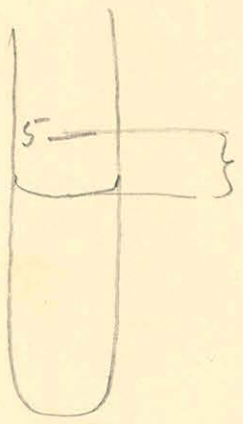
Összes + pikkelsav anya = 78,426 gr.

Összes anya = 58,414 gr.

Pikkelsav anya = = 20,012 gr.

Phthalsav nyra meleitve

Eyen eyjel meleitve
1893 Mon 15. regel.
Ellenalki 633,0



Idutan 3l. Ellenalki 598,3